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PROCEEDINGS  
OF THE  
ACADEMY OF NATURAL SCIENCES  
OF  
PHILADELPHIA.

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No. 4.—September and October, 1864.

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PHILADELPHIA:  
ACADEMY OF NATURAL SCIENCES,  
Corner of Broad and Sansom Streets.  
1864.

in considerable abundance with *U. stansburiana* and *thalassina*. *U. bicarinata* has been described by Prof. Duméril as typical of his genus *Phymatolepis*; it cannot be separated from *Uta*. His *Sauromalus* is also *Euphyryne* of Baird.

*Sceloporus utiformis*.

Ten longitudinal rows of large, highly keeled, shortly mucronate dorsal scales, separated by many lateral series of minute flat scales, from the smaller entire edged abdominals. From axilla to ear the laterals are granular; a dermal fold extends to temporal from scapular region, and sends branches to a V-shaped fold, which extends downwards and backwards from the posterior border of the large auricular opening. Six (seven) rows of shortly highly keeled scales on nape; from which point to rump are about 26 transverse series. Gular scales entire; three moderate infralabials. Six rather short supraorbitals, separated from marginals by three rows of small scales. Interparietal as broad as long, subrectangular, with two parietals on each side. Frontoparietals not subdivided transversely, as is usual, but subdivided longitudinally to frontal; latter a little longer than broad; first row between canthi of three broad plates fully in contact. Profile arched, muzzle prominent, narrow. Thirteen femoral pores. Tail cylindrical, long. From end of muzzle to ear  $7\frac{1}{4}$  l.; from ear to vent 2 in. 1 l.; vent to end of tail 5 in. 7 l.; anterior limb 1 in. 2 l.; posterior limb 2 in.; hind foot 11 l.

General color blackish, with numerous indistinct lighter cross bars. Below pale greenish grey; gular region greenish, with narrow light cross lines.

*Hab.*—Near Colima, Mexico. Obtained by John Xantus, U. S. Consul at Manzanillo.

A species technically nearest to the *S. couchii*, which exhibits much smaller dorsal scales, and approaching the genus *Uta* in its scutellation.

*Sceloporus pyrocephalus*.

Dorsal scales much larger than ventral, strongly keeled, unimucronate; in about twenty-five transverse oblique series from nape to crural region. Lateral scales larger than abdominal; of the latter a portion only slightly emarginate. Scales from ear to shoulder squamous; those of ear fringe a little larger than those anterior to them. Tail much compressed. Femoral pores twelve. Supraorbitals five, transverse, in immediate contact with narrow marginals, not touching superciliaries. Frontoparietal narrow; frontal broader than long, not divided. Parietals exceedingly small; interparietal large, much broader than long. Frontonasals two each side broader than long; posterior in contact; anterior embracing broad hexagonal internasal. Infralabials small, except the anterior pair, which is large and extensively in contact. From end of muzzle to ear 6 lines; ear to vent 1 inch 9 lines; length of anterior limb 11 lines; of hinder limb 1 inch 5 lines; of hinder foot 7 lines.

Greenish brown, with a broad black band from the scapular region to the groin, light bordered above. Below yellowish, sides bluish ash to near the median line, on each side of which is a series of from seven to nine transverse blue bars. Upper labial and gular region striped with a series of black or bluish lines, which converge posteriorly on a paler or deeper yellow ground. Top of the head bright chestnut red; the fontanelle white or pink, surrounded by a pale area. In many specimens, especially females, the head is brown above, except the parietal spot.

*Hab.*—Near Colima, Mexico; obtained by Jno. Xantus, U. S. Consul at Manzanillo, where it is abundant. Collection Nos. 1223, 1311. This small species may be known from the *thayeri* by the extension outward of its supraorbitals, and small size of its parietals, as well as by coloration, and its remarkably compressed tail.

*Sceloporus oligopus*.

Dorsal scales large, mucronate, in twenty rows from interscapular to sacral

regions, larger than laterals, which are larger than ventrals: last with a sharp mucro, and one or two emarginations. Tail cylindrical; femoral pores only two or three. Parietals large; interparietal longer than broad. Frontal and frontoparietal broad; former longer, undivided. Divided frontonasals and internasals in contact; supraorbitals in contact with both marginals and superciliary ridge, four on each side. Three pairs infralabials, transverse, the anterior barely in contact. Three bordering scales of ear, not larger than those preceding. End of muzzle to ear 11 lines; ear to vent 3 inches, 5 lines; length of tail 3 inches; length of anterior extremity 8 lines; posterior 2 inches 7 lines; hind foot 1 inch. Males, above brown, with a yellowish dorsolateral band and seven or eight pairs of yellowish, anteriorly black edged spots on the back. Top of head red; below whitish; sides faintly blue tinged. Females brown-olive, with a paler dorsolateral band. Throat, a broad band to shoulders, and sides of abdomen, blue.

*Hab.*—Near Colima, Mexico; from the Xantus coll.

A species to be compared with *clarkii*, *zosteromus* and *spinosus*, and differing from them and all other species in the fewness of the femoral pores, thus approaching the genus *Proctotretus*. The frontal is not narrow as in *zosteromus*, nor the ventrals rounded emarginate as in it and the other species. The supraorbitals are bordered by small scales in *spinosus*.

#### *Sceloporus malachiticus*.

Dorsal scales larger than lateral which are larger than ventral, strongly mucronate, in 25 to 28 rows from interscapular to sacral region, fourteen rows between axillæ and eight to ten between femora. Scales before shoulder squamous; marginal ear scales very small; supraorbitals five, broad, short, separated by small scales from superciliary ridge, and larger scales from narrow marginals. Parietals small, subtriangular; interparietal with parallel lateral borders, longer or as long as broad. Internasal broad; its anterior suture nearly straight. Infralabials small; anterior little or not in contact. Abdominal and gular scales not mucronate, and apparently not emarginate. Lateral scales, even to axilla, strongly mucronate, four times emarginate to serrate. End of muzzle to ear  $8\frac{1}{2}$  lines; ear to vent 2 inches 5 lines; anterior limb 1 inch, 5 lines; posterior limb 2 inches; tail ? ; sixteen femoral pores.

General color bright green, with angular dark cross-bars, five or six on each side. Sides of abdomen and throat blue; the latter extending to nape.

*Habitat.*—Costa Rica, near Arriba, whence the Smithsonian Institution has received specimens, 6492, through Chas. N. Riotte.

This animal is the tropical representative of our *Sundulatus*, though in general appearance not unlike the *formosus*. The much stronger mucronation and emargination of the scales, especially on the sides, as well as the color, are distinguishing traits.

#### *Phrynosoma asio*.

Nostrils lateral, in the line of the canthus rostralis. Three or four series of lateral gular scales on each side, which are short and subequal. Rostral present, flat semi-discoid. Eight scales on sharp infralabial ridge. Superior labials nine, subequal, not produced into horns continuous with temporo-occipital crest. Horns of latter, two diverging temporal, separated from two vertical occipital, which are separated by a depression. One high acute posterior superciliary on each side. Auricular opening large, bounded below and behind each by a bunch of spines. Two lateral series, superior large. Pectoral and abdominal scales large, keeled; femoral pores 7 to 9. A dorsolateral series of very thick spinous processes, and two median dorsal rows of flat mucronate scales, which become four rows of spines on the tail; one median nuchal row. Femur and tibia with two rows of spines each; three rows of very strongly keeled plates on the humerus. Tail of ♂ as long as from shoulder to vent; i. e., 13 inches 4 lines. End of muzzle to ear 1 inch; to shoulder 1 inch 6 lines; to

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end of temporal horn 1 inch 4 lines; to end of superciliary do. 1 inch. Width of front between middle of superciliary ridges 8 lines. Width of body (exclusive of lateral spines) 3 inches 4 lines.

General color ashy; the head pale; the body brownish: from occiput to groin between dorso-lateral and lateral rows of spines, deep brown, leaving a narrow pale space on nape. Four broad brown cross-bands anterior to sacral region, pale bordered posteriorly; nearly obsolete in ♂; tail with many brown, pale-edged cross-bands; below unspotted.

*Habitat*.—Colima, Mexico; from consul John Xantus.

This is the largest species of horned frog, and very distinct. Its affinities are between *cornutum* and *coronatum*.

*Gerrhonotus gramineus*.

Two pairs supranasals; the posterior longitudinal, elongate; internasal smaller than frontonasals. Four short supraorbitals; four marginals. Eleven supralabials. Two frenonasals, the smaller above the larger; one frenal and one very large freno-ocular. Six in first, five in second row of infralabials. Muzzle not produced; plates of head thickened and roughened, especially enlarged on the temporal region. Dorsal scales in twenty-three longitudinal series from nape to opposite groin, and in fourteen longitudinal rows; in form twice as long as wide, thick, with an obtuse keel, roughened in old specimens. Abdominal scales in twelve and fourteen series; lateral fold very weak. Extended limbs touching, or the posterior reaching wrist. Muzzle to ear 1 inch; to vent 4 inches 4 lines; vent to axilla 2 inches 11 lines; to end of tail 6 in. 3 lines; anterior limb 1 inch 2 lines; posterior 1 inch 7 lines.

Above bright pea green, each transverse series of scales blackish at the base, and yellowish at the tips. Below pale green, with a reddish tint in some, gular region and lower jaw yellow, abruptly separated from the green of the neck.

*Habitat*.—Orizaba, Mexico. Mus. Smithsonian. From a fine collection (No. 50), made by Prof. Sumichrast, which contained also *Spilotes poecilonotus* and *Atropus undulatus*. The Professor has recently published some interesting observations on the habits of certain Mexican reptiles in the *Ann. Mag. N. Hist.*, 1864, p. 497.

*Diploglossus steindachneri*.

Tail cyclotetragonal. Scales in thirty-two longitudinal rows, (ten dorsal), without central keel, eight and ten striate. Limbs weak, not meeting when pressed to side by the length of the hind foot; digits much compressed, claws acute. Five supraorbitals; frontal longer than broad, subparallelogrammic. No frontonasals; internasal broader than frontal. Supranasals very large. Two frenonasals, one above the other; one very high prefrenal; two postfrenals, one above the other; one freno-orbital. Nine supralabials. Interparietal triangular, longer than broad, separating the short parietals, whose posterior outline is emarginate and embraces the broader than long postparietals; frontoparietals very small. End of muzzle to shoulder 1 in. 1 l.; shoulder to vent 2 in. 6 l.; vent to end of tail 5 in. 2 l.; posterior limb 1 in. 2 l.

Olivaceous, the sides tessellated with small black spots, which become bands on the axillary and postauricular regions; lips greenish, black spotted; below uniform pale greenish.

*Hab.*—Orizaba, Mexico. Sent to the Mus. Smithsonian, (No. 6342), by Prof. F. Sumichrast. Dedicated to Dr. Franz Steindachner, of the Imperial Museum of Vienna.

*Lampropholis assatus*.

Scales small, entirely equal, in thirty longitudinal rows. Body subcylindrical; head short, not depressed. Tympanum large, in a deep depression, which is not fringed. Nasals and frontonasals respectively not in contact. In 1864.]

ternasal little broader than long; frontal much produced anteriorly, very acuminate posteriorly. Single frontoparietal broad as long, with transverse posterior suture. Four rather large supraorbitals. Interparietal longer than broad; parietals narrow, in contact posteriorly, not succeeded by a double row of transverse scales. One high frenonasal, one frenal, two freno-orbitals, one above the other. Superior labials seven. Palatine maxillary laminae overlapping their whole length. From end of muzzle to axilla  $7\frac{1}{2}$  lines; axilla to vent 1 in. 1 l. Length of tail 2 in. 5 l.; of hind limb  $6\frac{1}{2}$  lines.

Above brown fulvous; below pale fulvous; a faint dark line from eye across scapular region.

*Hab.*—Guatemala. Taken by Capt. J. M. Dow near the Volcano of Isalco, and presented by him to the Mus. Acad. Nat. Sciences.

The genus *Lampropholis* was first established by Dr. J. E. Gray, and called by him Mocoa. I prefer using the more classic and prior name of Fitzinger, though the genus is not to be attributed to this author. The present species is the first which has been found on the American continent. The American species placed in it by Gray belong to the genus *Oligosoma* Grd., under which *Lygosomella* Grd., *Leptosoma* Fitz., and perhaps *Hombromia* Grd., may be placed as synonyms.

*Oligosoma gemmingeri*.

Scales in twenty-seven longitudinal rows; the two median nuchal scarcely larger. Body stout, cylindrical, limbs short, weak, the anterior reaching the anterior margin of ear anteriorly, posteriorly not touching extremity of appressed hind limb by its length. Seven upper labials; one frenonasal, frenal, and freno-orbital each; parietals short; interparietal nearly broad as long. End of muzzle to axilla 10 lines; axilla to vent 1 in. 8 l.; posterior limb  $8\frac{1}{2}$  l.

Above fulvous or brown; beneath yellowish white. A dark dorso-lateral streak extends from the nostril to a distance on the tail, which is light bordered above on the body, and borders above a dark lateral shade.

*Hab.*—Orizaba, Mexico. From Prof. F. Sumichrast. Mus. Smithsonian, No. 6331.

This Mexican representative of our *O. laterale* differs in its stouter body and shorter limbs, its nearly equal dorsal and nuchal scales, its much shorter posterior cephalic and labial plates, and in color. Named in pleasant recollection of Dr. Max. Gemminger, of Munich, author of *Fauna Boica* and other works.

*Paludicola pustulosa*.

Muzzle compressed, narrow, plane above, produced beyond labial margin; canthus rostralis rounded. Nares nearly terminal; eyes rather large, each lid equaling the frontal width. Tympanum concealed; a large vocal sac. Skin above covered with small warts, some of which are linear and curved. No skin folds. Toes elongate, free, knobbed at extremities and under each joint; two metatarsal and one median inner tarsal spur; no tarsal fold. Below, on the breast, smooth, minutely rugose posteriorly. Two large metacarpal warts. Heel reaching middle of orbit. From end of muzzle to shoulder 7 l.; to vent 1 in. 3 l.; width across angle of jaws 5 l.; length of anterior limb 10 l.; of posterior 1 in. 9 l.; of hind foot 7 l.

Above blackish brown; elbow, tarsus and foot broadly banded with pink grey; below and on inner surfaces of limbs yellow, marbled with black, the latter color predominating anteriorly, but divided by a median yellow line to symphysis mandibuli.

*Hab.*—New Grenada, on the River Truando. Obtained by W. S. Wood, of Michler's Surveying Expedition. No. 4339.

*Paludicola* is a genus of Wagler's which has been latterly overlooked. It is the only one beside *Schismaderma* among the Bufonidæ which lacks the parotoids; from this genus it differs in its manubrium sterni, free toes, and tarsal spur, in this last respect resembling *Gomphobates biligonigerus*. It

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agrees with *Bufo* in the fully developed frontoparietal bones, differing from *Epidalea* (*Bufo calamita* Auct.) and *Pseudophryne* in this respect.

*Phyllomedusa dactylos.*

Parotoids exceedingly weak, if present. Fingers very slightly, toes one-third webbed. Labial margin projecting, profile sloping. Tympanum one-half orbit. Eyes not very prominent, transparent, inferior palpebra reticulated with white veins. Mandibular outlines straight. Tongue long, pyriform, openly emarginate posteriorly. Skin above smooth; inferior areolations not extending on pectoral or gular regions. Vomerine teeth in two straight transverse rows between anterior margin of inner nares. A few small pustules on anterior part of sides, which are yellow, like the inferior surfaces. Superior surfaces (narrowly on femur,) violet blue. Upper lip not light bordered; gular region and posterior faces of femora immaculate. From end of muzzle to posterior border of tympanum 10 lines; from angle to angle of mandible 1 in. 1 l.; end of muzzle to vent 3 in. 6 l.; anterior extremity 2 in.; posterior limb 3 in. 10 l.

*Hab.*—Near Colima; from the large Xantusian Coll.

This species diverges widely from the type of *Phyllomedusa* in its webbed toes and almost absent glands, but the glands are only a little stronger in the *P. azurea*. It affords an easy passage to the true *Hylæ*, whose family it enters, by the genus *Agalychnis* Cope. The type of the latter is *Hyla callidryas* Cope, and *H. moreletii* and *holochlora* are the other species. They have the tongue long and extensively free, sometimes emarginate, and the transparent inferior palpebra reticulated with strong white veins. The inner toes are remarkably lengthened and free of movement.

#### On the Limits and Relations of the RANIFORMES.

BY E. D. COPE.

Similar relations to those which exist between the mammalia *Implacentalia* and the remainder of the class, and vice-versa, are apparently repeated in other groups of greater or less rank in the animal kingdom. Among the tortoises, the *Pleurodera* separate themselves most strongly by the union of their ischia with the plastron, the *absence of the arch of the o. prefrontale* which elsewhere descends to the *o. palatinum*, or vomer, and their intergular shield; while they present modifications among themselves characteristic of most of the other families, arranging themselves according to the development of the parieto-mastoid arch, in an ascending series, which terminates in *Bothremys* and *Podocnemys*, where the temporal fossa is entirely roofed in, as in the sea turtles. In the *Lacertilia Acrodonta* we have a group equally removed from others of the order. The acrodont dentition, the great development of the *o. dentale* and final extinction of the *o. operculare*, etc., and the exclusion of the premaxillare from contact with the vomer, are peculiarities not found associated in other lizards, while their parallel representation of the groups of the *Iguanidæ* at least, among the *Pleurodonta*, is well known. In general these also form an ascending series to be measured by the gradual extinction of the *o. premaxillare*\* and *o. columellum*, which finally occurs in *Chamæleo*.

The *Raniformes* among *Batrachia Salientia* are in many respects comparable to the *Acrodonta*. They stand at the head of their order, possessing the most compact, powerful and complete organization, and in spite of the constant imitation of the many lower types, there is a certain homogeneity in important points. The structure of the sternum separates them at once, and

\* This bone, said to be single in *Lacertilia*, is divided in all the *true Scincoidæ*, in *Phyllurus* among the *Gecconidæ*, and, according to Owen, in *Hatteria*.